

REMARKS

Claims 1 – 35 are pending in the application. Applicants amend claims 1, 5, 6, 10, 11, 13, 17, 18, 20, 24, 25, 27, 31, 32,34 and 35, and add new claim 36. Support for the amendments and new claim 36 may be found, for example, in Applicants' specification at page 14, lines 4 – 9 and page 17, line 15 through page 19, line 20. No new matter is introduced.

REJECTION UNDER 35 U.S.C. § 102

Claims 1 - 35 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,185,736 to Tyrell et al. Applicants amend claims 1, 5, 6, 10, 11, 13, 17, 18, 20, 24, 25, 27, 31, 32,34 and 35 to further clarify the nature of their invention, and respectfully traverse this rejection.

Applicants disclose a digital subscriber line (DSL) communicating system using a time compression modulation ISDN (TCM ISDN) transmission scheme in which DSL transceivers are influenced by near-end crosstalk (NEXT) and far-end cross talk (FEXT) during different periods of a transmission cycle. In order to accommodate these influences, the transceivers apply a DMT modulation scheme in which two bitmaps are employed. A first bitmap is employed during a NEXT period, and a second bitmap is employed during the FEXT period. The second bitmap takes advantage of transmission characteristics during the FEXT period allowing for transmission of a greater number of bits than during the NEXT period. Applicants' system uses a sliding window scheme in which any DMT symbol to be transmitted during an interval that includes at least a portion of a NEXT period is transmitted using the first bitmap.

Applicant's invention, as claimed for example in independent claims 34 and 35, discloses a specific training method for a DSL transceiver including means for generating a sliding window based on a timing signal representative of the NEXT and FEXT periods, and means for

discriminating whether a transmitted DMT symbol belongs to and was transmitted using a bitmap associated with either the NEXT period or the FEXT period.

More specifically, for example as claimed in independent claim 1, Applicants' transceiver includes a sliding window generating unit, for generating a sliding window based on a timing signal reflective of the NEXT and FEXT periods, and a sliding window transmitting unit, where the sliding window generating unit further includes a hyperframe counter for periodically counting a predetermined number of DMT symbols constituting a hyperframe, and a decoder for discriminating based on this counter value whether a transmitted symbol belongs to a NEXT period or FEXT period at the receiving side. In addition, for example as claimed in independent claims 17 – 20 and 31 – 33, the DSL transceiver includes means for detecting the phase of a carrier signal transmitting the symbol in order to determine whether it belongs to the NEXT period or to the FEXT period.

Tyrell discloses a synchronous optical transmission (SONET) system comprising fiber transmission systems, terminal multiplexers and add/drop multiplexers. The terminal multiplexers include a low-speed DS-1 interface for interfacing to a high-speed STS-1 signal. Unlike Applicants' claimed invention, Tyrell does not disclose a DSL communicating system that transmits, receives and discriminates DMT symbols. As claimed for example in Applicants' independent claim 1, Tyrell fails to disclose a hyperframe counter for periodically counting a predetermined number of DMT symbols and a decoder for discriminating whether a DMT symbol belongs to a FEXT period or NEXT period based on a hyperframe counter value

As claimed in Applicants' independent claims 17 – 20 and 31 – 33, Tyrell further fails to disclose detecting the phase of a carrier signal in order to recognize whether an associated DMT symbol belongs to a NEXT period or to a FEXT period. Applicants' respectfully disagree with the Examiner's characterization analogizing alternating Barker codes in digital frames with carrier signal phase.

As explicitly claimed in Applicants' claims 17 and 31, there is no disclosure in Tyrell indicating detection of a phase of a carrier signal as an output of a Fast Fourier Transform of the carrier signal. In addition, as claimed in Applicants' independent claims 34 and 35, Tyrell fails to disclose Applicants' claimed means for generating a sliding window based on a timing signal representing periodical noise duration (NEXT and FEXT period durations) together with means for discriminating the kind of durations based on a status of the sliding window.

In summary, Applicants submit that Tyrell fails to disclose Applicants' a) means for generating a sliding window based on a timing signal representing periodical noise duration, b) means for discriminating noise durations based on the status of the sliding window, c) hyperframe counter for counting DMT symbols, d) decoder for discriminating whether a DMT symbol belongs to a NEXT period or a FEXT period based on a hyperframe counter value, and e) means for detecting the phase of an associated carrier signal in order to determine whether a DMT symbol belongs to a NEXT or FEXT period. Moreover, in the context of the SONET system as disclosed by Tyrell, there is simply no motivation to distinguish FEXT and NEXT periods in the manner claimed by Applicants in order to operate the SONET system.

Accordingly, Applicants respectfully submit that independent claims 1, 17 - 20, 31 - 35 are not anticipated by Tyrell. As claims 2 - 16 and 21 - 30 depend directly from these allowable independent claims, Applicants respectfully submit that claims 2 - 16 and 21 - 30 are allowable for at least this reason.

CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 1 - 36, consisting of independent claims 1, 17 - 20, 31 - 36, and the claims dependent therefrom, are in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason

the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged on Deposit Account 50-1290.

Respectfully submitted,



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